ment of this end will do much to bring about uniformity of action on the part of public officials and to further increase the efficiency of the various State and municipal health organizations. The results of the survey of the health administration of Washington have been published (*Public Health Reports*, February 5, 1915). The conclusion was reached that the adoption and enforcement of measures for the protection of the public health in that State have not kept pace with the economic growth of the State. An analysis is made of the various functions and activities of the Washington State Board of Health and certain recommendations are made, the adoption of which it is believed would meet the present public health requirements of that State. Briefly summarized, these recommendations are: That all public health activities now performed by the State should be brought together in a single department of health, to be subdivided into bureaus, with a commissioner of health as the administrative head and the State Board of Health as an advisory and quasilegislative body. The functions of the various bureaus are carefully outlined, and it is recommended that the State be divided into not less than fifteen health districts, each to be under a whole-time health officer of adequate training and experience in the science of public health. It is also recommended that the State be divided into three districts, each to be put under the supervision of a sanitary engineer. Provision is made for laboratories and the passage of various model laws, one for morbidity reports receiving especial attention. Up to this time the Public Health Service has made and published the results of surveys of health administration of the States of Minnesota, Maryland, West Virginia and Washington, and of the city of Baltimore. It has been announced that the service is now making health surveys of other States and of several cities.

The Milk Supply as a Causal Factor in Relation to Tuberculosis.—SHERIDAN DELÉPINE (*Journal State Medicine, Reprint*, November and December, 1914) states that it is impossible to measure accurately the amount of tuberculosis that is attributable to cows' milk because the various methods of investigation give widely different indications. There is, however, on many points, general agreement between observers; the differences relate chiefly to quantitative estimates. The information supplied by the various methods indicates: (1) That an exceedingly small number or children are tuberculous at birth; (2) That soon after birth they begin to contract the disease; (3) That the nature of the tuberculous lesions and their distribution show that before the fifteenth year the alimentary passages are important channels of infection, and that after the fifteenth year infection generally takes place through the air passages; (4) That, when the matter has been investigated, it has been found that among children suffering from tuberculosis other than pulmonary tuberculosis a great number have been fed on unsterilized cows' milk; (5) That from the lesions of children fed on unsterilized cows' milk, bacilli resembling those associated with bovine lesions are found in the great majority of cases; (6) That both the distribution of the lesions and the characters of the bacilli seem to indicate that not less than 20 to 25 per cent. of the cases of infantile tuberculosis are attributable to infection through cows' milk, and that

some results indicate a much higher proportion; (7) That experimental evidence shows that the ingestion of tuberculous cows' milk is followed by infection through the alimentary canal in the great majority of mammals on which the experiment has been made. Delèpine concludes that it appears reasonable to say that, although there is not complete agreement in the results obtained by various observers as to the exact amount of human tuberculosis attributable to the consumption of tuberculous cows' milk, there is *clear and cumulative evidence that cows' milk plays a very important part in the production of infantile tuberculosis in England and Scotland.*

The Action of Anti-pneumococci Serum.—C. G. BULL (*Proc. Soc. Exper. Biol. and Med.*, 1915, xii, 149) studied the cause of the disappearance of pneumococci from the blood, following an intravenous injection of a small amount of immune serum. He found that the immune serum actively agglutinated the pneumococci in dilutions of 1 to 500, when observed under the microscope, whereas macroscopically the agglutination titre is 1 to 80. Therefore, it was surmised that the disappearance of the bacteria from the circulating blood, following the injection of immune serum, might be due to clumping *in vivo*. Next, fragments of the organs—lungs, spleen, liver, kidney, brain, etc., were crushed and examined and clumps of pneumococci were found in all. The fate of the clumps was then investigated. By killing the rabbits at various times, after the administration of the serum, it was observed that the polymorphonuclear leukocytes englobed and digested them. The fixed cells play a small part also. Sectioned and crushed tissues gave the same results. Pneumococci from 150 c.c. of bouillon are thus destroyed within two to three hours. The smallest amount of serum that will influence the infection causes the clumping *in vivo*.

Chronic Lead Poisoning: Breeding Experiments.—C. V. WELLER (*Proc. Soc. Exper. Biol. and Med.*, 1915, xii, 157) notes that there have been frequent clinical observations of the apparent deleterious effect upon the germ plasm exerted by chronic poisoning. A majority of these cases have been found in female lead workers and in these it might be supposed that abortions, stillbirths, and early deaths of infants were due as much to the toxic effect of lead during extra-uterine development as to an actual injury to the germ plasm. In the smaller number of instances in which the male parent alone was poisoned, the resulting sterility without impotency, the stillbirths and the early deaths of offspring are difficult to explain unless they are due to blastophthoria. The work of Stockard and of Cole and Davis has shown that alcohol has a similar effect. In a recent report which appeared as the present series of experiments was being concluded Cole and Bachhuber have demonstrated that the offspring of male rabbits poisoned by lead as well as of male fowls similarly poisoned are of distinctly lower vitality than the offspring of normal males. In attempting to determine experimentally whether blastophthoria occurs in chronic lead poisoning, guinea-pigs were given repeated weighed doses of commercial white lead in capsules by mouth. These guinea-pigs were mated, lead females with normal males and lead males with normal females. In order to check the results as efficiently as possible control matings were